# *FlyBy Math*™ Alignment
## Elementary Mathematics Core Content for Assessment
## version 4.0 October 2005

## Number Properties and Operations

### *Estimation*

| Content Statement | *FlyBy Math*™ Activities |
|---|---|
| **MA-05-1.2.1**<br>**Students will apply and describe appropriate strategies for estimating quantities of objects and computational results in real-world situations.**<br>**DOK - 2** | --Predict outcomes and explain results of mathematical models and experiments.<br><br>--Compare predictions, calculations, and experimental evidence for several aircraft conflict problems. |

## Measurement

### *Measuring Physical Attributes*

| Content Statement | *FlyBy Math*™ Activities |
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| **MA-05-2.1.1**<br>**Students will apply standard units to measure:**<br>**• Weight (ounce, pound; gram, kilogram);**<br>**• Length (nearest eighth-of-an-inch or nearest centimeter);**<br>**• Perimeter;**<br>**• Area (figures that can divided into rectangular shapes);**<br>**• Time (nearest minute);**<br>**• Temperature (Fahrenheit and Celsius); and**<br>**• Angles (nearest degree).**<br>**DOK - 3** | --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |
| *MA-05-2.1.1a*<br>*Students will choose appropriate tools (e.g., protractor, meter stick, ruler) for specific tasks and apply skills to solve real-world and/or mathematical problems.* | --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |
| *MA-05-2.1.1b*<br>*Students will use measurements to identify, describe, sort, and compare attributes of objects and apply these to solve real-world and/or mathematical problems.* | --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |
| **MA-05-2.1.2**<br>**Students will estimate weight, length, perimeter, area, angles, and time using appropriate units of measurement.**<br>**DOK - 2** | --Predict outcomes and explain results of mathematical models and experiments. |

| *Systems of Measurement* | |
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| **Content Statement**<br><br>**MA-05-2.2.2**<br>**Students will convert units within the same measurement system [U.S. customary (inches, feet, yards, miles; ounces, pounds, tons), metric (millimeters, centimeters, meters, kilometers; grams, kilograms), money, or time (seconds, minutes, hours)], and determine elapsed time.**<br>**DOK - 2** | ***FlyBy Math™* Activities**<br><br>--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |

## Geometry

| *Coordinate Geometry* | |
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| **Content Statement**<br><br>**MA-05-3.3.1**<br>**Students will identify and graph ordered pairs on a positive coordinate system scaled by ones, twos, threes, fives, or tens; locate points on a grid; and apply graphing in the coordinate system to solve real-world problems.**<br>**DOK - 2** | ***FlyBy Math™* Activities**<br><br>--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes. |

## Data Analysis & Probability

| *Data Representations* | |
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| **Content Statement**<br><br>**MA-05-4.1.1**<br>**Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs).**<br>**DOK - 3** | ***FlyBy Math™* Activities**<br><br>--Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs.<br><br>--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. |
| *MA-05-4.1.1a*<br>*Students will collect data (e.g., tallies, surveys) and explain how the skills apply in real-world and/or mathematical situations.* | --Conduct simulation and measurement for several aircraft conflict problems.<br><br>--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation. |
| **MA-05-4.1.2**<br>**Students will construct data displays (pictographs, bar graphs, line plots, line graphs, Venn diagrams, tables).**<br>**DOK - 2** | --Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs. |

| *Experiments and Samples* | |
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| **Content Statement**<br><br>*MA-05-4.3.1a*<br>*Students will describe and give examples of the process of using data to answer questions (e.g., pose a question, plan, collect data, organize and display data, interpret data to answer questions)* | ***FlyBy Math™* Activities**<br>--Conduct simulation and measurement for several aircraft conflict problems.<br><br>--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation. |

## Algebraic Thinking

| *Patterns, Relations, and Functions* | |
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| **Content Statement**<br><br>**MA-05-5.1.1**<br>**Students will extend patterns or describe rules for patterns (e.g., numbers, pictures, tables, words) from real-world or mathematical situations.**<br>**DOK - 3** | ***FlyBy Math™* Activities**<br><br>--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. |
| **MA-05-5.1.2**<br>**Students will describe functions (input-output) through pictures, tables, or words, and will construct tables to analyze functions based on real-world or mathematical situations.**<br>**DOK – 2** | --Represent distance, speed, and time relationships for constant speed cases linear equations and a Cartesian coordinate system.<br><br>--Use tables, graphs, and equations to solve aircraft conflict problems. |